

and liquid where, the filtering module is made of a filter cloth comprising a filtering layer composed of yarns in the transverse and the longitudinal directions, and an underside of the filter cloth, i.e. the surface to be against the filtering element, comprises of substantially parallel yarns that are thicker than the other yarns of the filter cloth, and channels are formed between the thicker yarns, wherein the liquid filtered by the filter cloth is allowed to flow in the direction of a surface of the filtering element.--

--12. The filtering apparatus as claimed in claim 11, wherein a filtering module is arranged such that the channels in the bottom of the cloth are directed according to a structure of the filtering module.--

--13. The filtering apparatus as claimed in claim 11, wherein a filtering module is arranged such that the channels in the bottom of the cloth are directed such that the channels lead the filtered liquid to openings in the filtering element.--

--14. The filtering apparatus as claimed in claim 11, wherein the filtering module comprises heat-shrinkable yarns, allowing the filtering module to be stretched over the filtering element by thermal treatment.--

REMARKS

Claims 1-14 are pending. By this Amendment, the Abstract and claims 1, 4 and 6-9 are amended, and claims 11-14 are added. The Abstract is amended to better conform to U.S. Practice. The amended claims retain their scope. No new matter has been added.

The attached Appendix includes marked-up copies of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

For at least the following reasons, Applicant respectfully submits that claims 1-14 are allowable. Reconsideration of claims 1-10 in view of the foregoing amendments and following remarks, as well as due consideration and prompt allowance of claims 11-14, are respectfully requested.

I. REPLY TO REJECTIONS

In item 2 of the Office Action, claims 1-10 are rejected under 35 U.S.C. §112, second paragraph. Specific language in claims 1, 4 and 6-9 is identified as providing the basis for the rejection. Claims 1, 4 and 6-9 are amended to obviate the rejection. Withdrawal of the rejection of claims 1, 4 and 6-9 as well as claim 10, which depends from claim 7, is respectfully requested.

In item 4 of the Office Action, claims 1 and 3-5 are rejected under 35 U.S.C. §102(a) and (e) as anticipated by U.S. Patent No. 5,843,542 to Brushafer et al.(hereinafter "Brushafer"). The rejection is respectfully traversed.

Applicant respectfully submits that Brushafer fails to disclose a filter cloth composed of a plurality of yarns in the transverse and longitudinal directions, the filter cloth comprising a filtering portion having a structure and density according to desired filtering characteristics for separating liquid from a mixture consisting of solids and liquids, and which filter cloth is further to be arranged against a filtering element in a filtering apparatus, and an underside of the filter cloth, i.e., a portion facing the filtering element, comprises substantially parallel yarns that are thicker than the rest of the yarns of the cloth, and that the thicker yarns form parallel channels therebetween in order to enable the filtered liquid to flow in the direction of the surface of the filtering element between the filtering portion of the filter cloth and the filtering element, as recited in claim 1.

Brushafer is directed towards a fabric sleeve to serve as a protective or insulating layer over an elongated item, such as electrical wiring or hot tubing (see col. 1, lines 12-21 and col. 3, lines 27-30). As disclosed in Figs. 1A and 1B, Brushafer's woven fabric has a weft and a warp that are very loose and fails to provide a filter cloth comprising a filtering portion having a structure and density according to a desired filtering characteristic for separating liquid from a mixture consisting of solids and liquid, as the primary purpose of Brushafer's disclosure is not for filtering, but rather, protecting.

Further, Brushafer discloses fill yarns of small and large diameters that are alternating, and thus creating relatively empty spaces (col. 2, lines 12-16). As such, Brushafer cannot provide a filter cloth for solid-liquid filtration. Finally, Brushafer fails to disclose an underside of the filter cloth comprised of substantially parallel yarns that are thicker than the rest of the yarns of the cloth. Brushafer discloses a structure where both the upper and lower portions with respect to the twisting yarns are symmetrical (see Figs. 1 and 2). As a consequence of that, the upper surface of the fabric of Brushafer is undulated. Because of the undulations, separated solids would stick on the undulated upper surface of the fabric and cause difficulty in removing such solids, negating the benefits of use of a filter cloth.

Thus, Applicant respectfully submits that claim 1 is distinguishable over the applied reference. Further, claims 3-5, which depend from claim 1, are likewise distinguishable over the applied reference for at least the reasons discussed above and for the additional features they recite. Withdrawal of the rejection of claims 1 and 3-5 is respectfully requested.

In item 10 of the Office Action, claims 7-10 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,019,987 to Krasnow in view of Brushafer. The rejection is respectfully traversed.

Applicant respectfully submits that neither Krasnow nor Brushafer teach or disclose a filtering module to be arranged on a filtering element as a filtering surface when liquid is separated from a mixture consisting of solids and liquids by means of a filtering apparatus, which filtering module is made of filter cloth comprising a filtering layer composed of yarns in the transverse and longitudinal directions, and an underside of the filter cloth, i.e., the surface to be against the filtering element, is comprised of substantially parallel yarns that are thicker than the other yarns of the cloth, and that channels are formed between the thicker yarns, wherein the liquid filtered by the cloth is allowed to flow in the direction of a surface of the filtering element, as recited in claim 7. Applicant respectfully submits that the

discussion of Brushafer above applies to this rejection as well, as Brushafer fails to disclose a filtering module made of filter cloth comprising a filter ring layer composed of yarns in the transverse and longitudinal directions and an underside of the filter cloth comprises of substantially parallel yarns that are thicker than the other yarns of the cloth and the channels are formed between the thicker yarns where the liquid filtered by the cloth is allowed to flow in the direction of a surface of the filtering element.

Krasnow is directed towards an extended area filter for filtering plastic stock at high pressure having a breaker plate with an undulating surface confronting the oncoming stock so that the filtering area is doubled (see the Abstract, for example). As such, Krasnow discloses a screen 16 fitted on a front surface 12 of a breaker plate 10 of the plastic processing apparatus. The screen 16 is made of wire and is meant to be shape retaining as evidenced by the backing breaker plate 10. The combination of the teaching in Krasnow with Brushafer is illogical as Brushafer teaches a flexible apparatus whereas Krasnow teaches a shape retaining apparatus. As such, the combination of Krasnow in view of Brushafer fails to disclose this application.

Furthermore, Krasnow discloses the screen is in contact substantially uniformly throughout its area with the front surface of the breaker plate. As such, it is not possible to form channels between the screen and the plate. Further, with the application of over 10,000 pounds per square inch or more during pressing of the plastic stock, the pressing of the screen against the breaker plate would not allow for channels that ease the flow of fluid. Furthermore, the corrugated shape would render difficult, the removal of solids from such a complex surface of the screen. As such, there is no motivation of modifying the disclosure in Krasnow with that of Brushafer to create the application. Additionally, any combination would not provide the claimed invention as combining the references destroys the functionality of the one or other of the references and does not produce the claimed invention.

As such, Applicant respectfully submits that claim 7 is distinguishable over the applied references. Claims 8-10, which depend from claim 7 are likewise distinguishable over the applied references for at least the reasons discussed above and for the additional features they recite. Withdrawal of the rejection of claims 7-10 is respectfully requested.

Finally, the Applicant acknowledges, with appreciation, the indication in item 15 of the Office Action that claims 2 and 6 contain allowable subject matter.

With regards to item 16 of the Office Action, in addition to the statement therein, Applicant respectfully submits that the applied references further fail to disclose the subject matter in claims 1 and 7, specifically, filter cloth composed of a plurality of yarns in the transverse and longitudinal directions, the filter cloth comprising a filtering portion having a structure and density according to desired filtering characteristics for separating liquid from a mixture consisting of solids and liquid, and which filter cloth is further to be arranged against a filtering element in a filtering apparatus, and an underside of the filter cloth, i.e., a portion facing the filtering element, comprises substantially parallel yarns that are thicker than the rest of the yarns of the cloth, and that the thicker yarns form parallel channels therebetween in order to enable the filtered liquid to flow in the direction of the surface of the filtering element between the filtering portion of the filter cloth and the filtering element, as recited in claim 1, and a filtering module to be arranged on a filtering element as a filtering surface when liquid is separated from a mixture consisting of solids and liquid by means of a filtering apparatus, which filtering module is made of filter cloth comprising a filtering layer composed of yarns in the transverse and longitudinal directions, and an underside of the filter cloth, i.e., the surface to be against the filtering element, comprises of substantially parallel yarns that are thicker than the other yarns of the cloth, and that channels are formed between the thicker yarns, wherein the liquid filtered by the cloth is allowed to flow in the direction of a surface of the filtering element, as recited in claim 7, in addition to claims 3-5, and claims

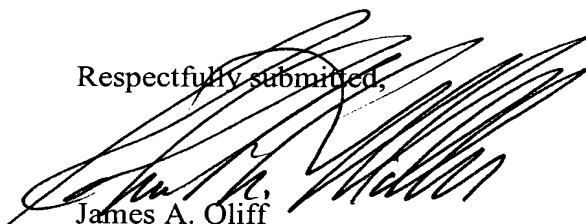
8-10, which recite additional features further to their dependency upon claims 1 and 7, respectively.

II. CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10, as well as due consideration and allowance of claims 11-14 are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the Applicant's representative at the telephone number listed below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Robert A. Miller
Registration No. 32,771

JAO:RAM:SSK/mmc

Attachment:
Appendix
Substitute Abstract

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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ABSTRACT OF THE DISCLOSURE

A filter cloth whose underside comprises substantially parallel, additional yarns that are thicker than the rest of the yarns of the cloth, substantially parallel channels being formed between the yarns, wherein filtered liquid passed through the cloth is allowed to flow in the direction of the surface of a filtering element between the filtering portion of the cloth and the surface of the element. The invention further relates to a filtering module manufactured from the filter cloth of the invention.

APPENDIX

Changes to Abstract:

The following is a marked-up version of the amended Abstract.

A filter cloth whose underside comprises substantially parallel, additional yarns 8-that are thicker than the rest of the yarns of the cloth, substantially parallel channels 9-being formed between the yarns, wherein filtered liquid passed through the cloth is allowed to flow in the direction of the surface of a filtering element 10-between the filtering portion of the cloth and the surface of the element. The invention further relates to a filtering module manufactured from the filter cloth of the invention.

Changes to Claims:

Claims 11-14 are added.

The following is a marked-up version of the amended claims 1, 4 and 6-9:

1. (Amended) FilterA filter cloth composed of a plurality of yarns in the transverse and the longitudinal directions, the filter cloth comprising a filtering portion having a structure and density according to desired filtering characteristics for separating liquid from a mixture consisting of solids and liquid, and which filter cloth is further to be arranged against a filtering element in a filtering apparatus, and ~~the~~an underside of the filter cloth, i.e., a portion facing the filtering element, comprises substantially parallel yarns that are thicker than the rest of the yarns of the cloth, and that the thicker yarns form parallel channels therebetween in order to enable the filtered liquid to flow in the direction of the surface of the filtering element between the filtering portion of the filter cloth and the filtering element.

4. (Amended) Filter cloth as claimed in claim 1, wherein the thicker yarns in the ~~bottom~~underside of the filter cloth have the same direction as ~~the~~a weft.

6. (Amended) Filter cloth as claimed in claim 1, wherein batt has been needled to the filtering portion of ~~the~~ an upper surface of the filter cloth, i.e., a surface facing away from the filtering element, to obtain a denser structure.

7. (Amended) A filtering module to be arranged on a filtering element as a filtering surface when liquid is separated from a mixture consisting of solids and liquid by means of a filtering apparatus, which filtering module is made of filter cloth comprising a filtering layer composed of yarns in the transverse and the longitudinal directions, and ~~the filtering module is made of an underside of the filter cloth whose underside~~, i.e., the surface to be against the filtering element, is comprisescomprised of substantially parallel yarns that are thicker than the other yarns of the cloth, and that channels are formed between the thicker yarns, wherein the liquid filtered by the cloth is allowed to flow in the direction of ~~the~~ a surface of the filtering element.

8. (Amended) A filtering module as claimed in claim 7, wherein ~~a final filtering module~~, the filter cloth is arranged such that the channels in the bottom of the cloth are directed according to ~~the~~ a structure of the filtering module.

9. (Amended) A filtering module as claimed in claim 7, wherein ~~in a final filtering module~~, the filter cloth is arranged such that the channels in the bottom of the cloth are directed such that the channels lead the filtered liquid to openings in the filtering element.